Activity 15 —Triangle Proportionality

Objectives

This activity is designed to help students discover the following theorems:

- ✔ *Triangle Proportionality Theorem: If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides proportionally.*
- ✔ *If a ray/line bisects an angle of a triangle, then it divides the opposite side into segments whose lengths are proportional to the lengths of the other two sides.*

Vocabulary

triangle
ratio
vertex
proportion (students need to understand the concept of two equal ratios being a proportion)
parallel
angle bisector

Answers

8. They are the same.

11. It changed because we changed the location of the parallel line.

12. No, because we changed the shape of the triangle, not the location of the parallel line.

13. If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides proportionally.

24. The ratios are equal.

25. If a ray/line bisects an angle of a triangle, then it divides the opposite side into segments. The segment lengths are proportional to the lengths of the other two sides.

31. The ratios are the same.

32. Yes, they will be the same.

33. Since it holds true for two, it will hold true for the third.

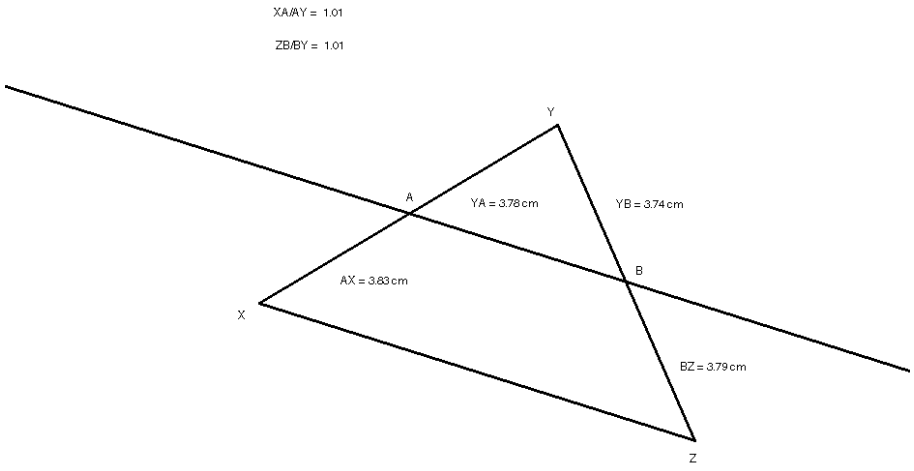

Figure A.11

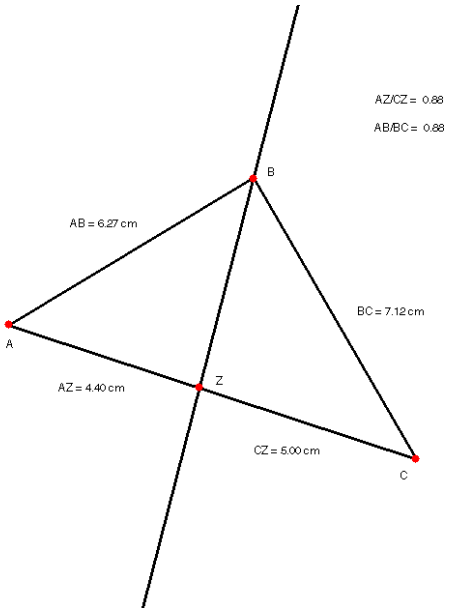

Figure A.12